

**Listing of the Claims:**

This listing of claims will replace all prior versions and listing of claims in the application:

1-400. (Cancelled)

401. (Currently Amended) A method of expanding a population of CD34+ hematopoietic stem cells *ex-vivo*, while at the same time, ~~substantially~~ inhibiting differentiation of the stem cells *ex-vivo*, the method comprising:

(a) culturing said CD34+ stem cells *ex-vivo* under conditions allowing for cell proliferation, said conditions which comprise providing nutrients, serum and a combination of cytokines selected from the group consisting of stem cell factor, thrombopoietin, FLt3 ligand, IL-6 and IL-3 and,

(b) at the same time, culturing said cells under conditions which inhibit differentiation, said conditions which comprise providing nicotinamide, nicotinamide analog, or nicotinamide derivative in an amount effective to inhibit differentiation, wherein said amount effective to inhibit differentiation is in the presence of 1.0 mM to 10 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative,

wherein said cells are cultured for a culture period resulting in expanding the population of hematopoietic stem cells while inhibiting differentiation of said CD34+ stem cells *ex-vivo*, as compared to CD34+ cells cultured in the presence of cytokines and nutrients without exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

402-410. (Cancelled)

411. (Currently Amended) A transplantable hematopoietic cell preparation comprising:

an expanded population of CD34+ hematopoietic stem cells propagated *ex-vivo* under conditions allowing for cell proliferation, said conditions which comprise providing ~~in the presence of~~ nutrients, serum and a combination of cytokines selected from the group consisting of stem cell factor, thrombopoietin, FLt3 ligand, IL-6 and IL-3, and under conditions which inhibit differentiation, said conditions which comprise providing nicotinamide, nicotinamide analog, or nicotinamide derivative in an amount effective to inhibit differentiation, wherein said amount

effective to inhibit differentiation is in the presence of 1.0 mM to 10 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative, wherein said hematopoietic cell preparation is characterized by a greater percentage of CD34<sup>+</sup>/CD38<sup>-</sup> and CD34<sup>+</sup>/Lin<sup>-</sup> cells as compared to hematopoietic stem cells propagated in the presence of cytokines and nutrients without exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative; and a pharmaceutically acceptable carrier.

412 - 413. (Cancelled)

414. (Previously Presented) The method of claim 401, wherein said population of stem cells are selected from the group consisting of: embryonic stem cells and adult stem cells.

415. (Cancelled)

416. (Previously Presented) The method of claim 401, wherein said stem cells are derived from a source selected from the group consisting of: bone marrow, peripheral blood and neonatal umbilical cord blood.

417 - 418. (Cancelled)

419. (Previously Presented) The method of claim 401, wherein said expanded hematopoietic cells are characterized by an absence, or significantly diminished expression of cell surface antigens CD3, CD61, CD19, CD33, CD14, CD15 or CD4.

420 - 421. (Cancelled)

422. (Previously Presented) The method of claim 401, wherein said combination of cytokines further comprise at least one cytokine selected from the group consisting of: interleukin-1, interleukin-2, interleukin-10, interleukin-12 and tumor necrosis factor- $\alpha$ .

423. (Previously Presented) The method of claim 401, which method further comprises providing late acting cytokines.

424. (Original) The method of claim 423, wherein said late acting cytokines are selected from the group consisting of: granulocyte colony stimulating factor, granulocyte/macrophage colony stimulating factor, erythropoietin, FGF, EGF, NGF, VEGF, LIF, Hepatocyte growth factor and macrophage colony stimulating factor.

425 - 436. (Cancelled)

437. (Previously Presented) The method of claim 401, wherein said nicotinamide analog is selected from the group consisting of: benzamide, nicotinethioamide, nicotinic acid and  $\alpha$ -amino-3-indolepropionic acid.

438. (Previously Presented) The method of claim 401, wherein said nicotinamide analog is benzamide.

439 - 463. (Cancelled)

464. (Previously Presented) The method of claim 401, wherein said culturing said cells in the presence of said exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative is for a period of up to three weeks.

465. (Previously Presented) The transplantable cell preparation of claim 411, wherein said culturing said cells in the presence of said exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative is for a period of up to three weeks.

466 - 468. (Cancelled)

469. (Previously Presented) The method of claim 401, wherein said cells are cultured in the presence of 1.0 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

470. (Previously Presented) The method of claim 401, wherein said cells are cultured in the presence of 5.0 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

471. (Previously Presented) The method of claim 401, wherein said cells are cultured in the presence of 10.0 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

472 - 477. (Cancelled)

478. (Previously Presented) The transplantable cell preparation of claim 411, wherein said cells are propagated in the presence of 1.0 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

479. (Previously Presented) The transplantable cell preparation of claim 411, wherein said cells are propagated in the presence of 5.0 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

480. (Previously Presented) The transplantable cell preparation of claim 411, wherein said cells are propagated in the presence of 10.0 mM of exogenously added nicotinamide, nicotinamide analog or nicotinamide derivative.

481. (Cancelled)